I claim:

1. A method of network management comprising:

providing a central controller for controlling network access of at least one access point and a respective plurality of associated clients;

monitoring a plurality of network parameters that influence performance between the clients and the network;

regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance.

2. The method of claim 1 wherein the step of monitoring network parameters comprises monitoring at least one of:

time division, buffering, bandwidth, frequency, space and throughput.

3. The method of claim 1 wherein the step of regulating access comprises the step of operating with a goal function to optimize a desired network metric.

4. The method of claim 3 wherein the step of operating with a goal function comprises the step of approaching an extremum of at least one network parameter.

5. The method of claim 4 wherein the step of approaching an extremum comprises the step of minimizing packet jitter.

6. The method of claim 4 wherein the step of approaching an extremum comprises the step of maximizing network throughput.

7. The method of claim 6 wherein the step of maximizing throughput comprises the step of monitoring network packet collision history and adjusting client access to specific time slots.

8. The method of claim 7 wherein the step of maximizing network throughput comprises the step of managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between potentially interfering clients.

9. The method of claim 8 wherein the step of managing space comprises the step of simultaneously managing time by selecting client time division multiple accesses on each access point to avoid simultaneous access between potentially interfering clients.

10. The method of claim 6 wherein the step of maximizing throughput comprises the step of monitoring packet angle-of-arrival information to determine access of particular clients.

11. The method of claim 10 wherein the step of maximizing the throughput comprises the step of managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between interfering clients.

12. The method of claim 11 wherein the step of maximizing throughput comprises the step of using beam/null forming to compute on orthogonal antenna array pattern.

13. The method of claim 4 wherein the step of approaching an extremum comprises the step of minimizing packet jitter and packet delay by granting priority access to real time packets.

14. The method of claim 1 wherein the step of monitoring comprises the step of observing the positions of each access point and respective clients, and wherein the step of regulating comprises the step of controlling network access according to a network access topology selected to allow service to more than one client per TDMA time slot.

15. The method of claim 14 wherein the step of controlling network access comprises the step of selecting a modified network topology based on changes in the monitored plurality of network parameters.

16. The method of claim 15 wherein the monitored network parameters include at least one of: data rate used; number of retries; and topological configurations used when talking to clients.

17. The method of claim 1 further comprising a network calibration routine comprising the following steps:

instructing a particular access point to transmit a signal in a desired direction;

detecting the signal using the respective other access points;

reporting to a main controller received signal strength and direction of arrival detected by the respective other access points;

repeating the above steps for each of the respective other access points;

using the main controller to determine a network access topology to reduce multipath interference between clients.

18. The method of claim 7 further comprising the steps of performing the network calibration routine for each of the respective plurality of clients.

19. A network apparatus comprising a network management system for managing network across of at least one access point a respective plurality of associated clients, the management system comprising:

a machine-implemented algorithm for monitoring a plurality of performance-related network parameters between the clients and the network, and outputting instructions for varying at least one of the network parameters;

a processor for regulating access of the plurality of clients according to the algorithm's outputted instructions, to regulate access of the plurality of clients in order to influence network performance.

20. The network apparatus of claim 19 wherein the at least one access point comprises a plurality of access points and wherein the management system comprises at least one

of the plurality of access points, designated to manage at least a portion of the plurality of access points.

21. The network apparatus of claim 19 wherein the management system comprises an enhanced ethernet switch.

22. The network apparatus of claim 21 wherein the enhanced ethernet switch comprises:

a high speed network ethernet media access controller for interfacing with a network;

a respective plurality of AP ethernet media access controllers for sending and receiving data from the respective access points;

wherein the processor is a dedicated processor for implementing the algorithm and regulating data flow between the network and the respective access points.

23. The network apparatus of claim 21 wherein the enhanced ethernet switch operates Reservation Protocol and subnet band width management, and is 801.1P and 801.1Q compliant.

24. The network apparatus of claim 10 wherein the algorithm can be implemented by at least one of an associative neutral net, a root near square error program, and an artificial intelligence scheme.

25. The network apparatus of claim 24 comprises an algorithm-responsive antenna control for varying position of at least one adoptive directional antenna associated with an access point, to alternately select clients for varying at least one network parameter.

26. An apparatus for network management comprising:

means for centrally controlling network access of at least one access point and a respective plurality of associated clients;

means for monitoring a plurality of network parameters that influence performance between the clients and the network;

means for regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance.

27. The apparatus of claim 26 wherein the means for monitoring network parameters comprises means for monitoring at least one of:

time division, buffering, bandwidth, frequency, space and throughput.

28. The apparatus of claim 26 wherein the means for regulating access comprises means for operating with a goal function to optimize a desired network metric.

29. The apparatus of claim 28 wherein the means for operating with a goal function comprises means for approaching an extremum of at least one network parameter.

30. The apparatus of claim 29 wherein the means for approaching an extremum comprises means for minimizing packet jitter.

31. The apparatus of claim 29 wherein the means for approaching an extremum comprises means for maximizing network throughput.

32. The apparatus of claim 31 wherein the means for maximizing throughput comprises means for monitoring network packet collision history and adjusting client access to specific time slots.

33. The apparatus of claim 32 wherein the means for maximizing network throughput comprises means for managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between potentially interfering clients.

34. The apparatus of claim 33 wherein the means for managing space comprises means for simultaneously managing time by selecting client time division multiple accesses on each access point to avoid simultaneous access between potentially interfering clients.

35. The apparatus of claim 31 wherein the means for maximizing throughput comprises means for monitoring packet angle-of-arrival information to determine access of particular clients.

36. The apparatus of claim 35 wherein the means for maximizing the throughput comprises means for managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between interfering clients.

37. The apparatus of claim 36 wherein the means for maximizing throughput comprises means for beam/null forming to compute on orthogonal antenna array pattern.

38. The apparatus of claim 29 wherein the means for approaching an extremum comprises means for minimizing packet jitter and packet delay by granting priority access to real time packets.

39. The apparatus of claim 26 wherein the means for monitoring comprises means for observing the positions of each access point and respective clients, and wherein the means for regulating comprises means for controlling network access according to a network access topology selected to allow service to more than one client per TDMA time slot.

40. The apparatus of claim 39 wherein the means for controlling network access comprises means for selecting a modified network topology based on changes in the monitored plurality of network parameters.

41. The apparatus of claim 40 wherein the monitored network parameters include at least one of: data rate used; number of retries; and topological configurations used when talking to clients.

42. The apparatus of claim 26 further comprising a network calibration routine comprising:

means for instructing a particular access point to transmit a signal in a desired direction;

means for detecting the signal using the respective other access points;

means for reporting to a main controller received signal strength and direction of arrival detected by the respective other access points;

means for repeating the network calibration routine for each of the respective other access points;

means for using the main controller to determine a network access topology to reduce multipath interference between clients.

43. The apparatus of claim 32 further comprising means for performing the network calibration routine for each of the respective plurality of clients.

44. A computer usable medium having computer readable program code embodied therein for causing management of a network, the computer readable program code into a computer program product comprising:

instructions for centrally controlling network access of at least one access point and a respective plurality of associated clients;

instructions for monitoring a plurality of network parameters that influence performance between the clients and the network;

instructions for regulating access of the plurality of clients to the network so as to vary at least one of the plurality of network parameters, to influence performance.

45. The computer program product of claim 44 wherein the instructions for monitoring network parameters comprises instructions for monitoring at least one of:

time division, buffering, bandwidth, frequency, space and throughput.

46. The computer program product of claim 44 wherein the instructions for regulating access comprises instructions for operating with a goal function to optimize a desired network metric.

47. The computer program product of claim 46 wherein the instructions for operating with a goal function comprises instructions for approaching an extremum of at least one network parameter.

48. The computer program product of claim 47 wherein the instructions for approaching an extremum comprises the step of minimizing packet jitter.

49. The computer program product of claim 47 wherein the instructions for approaching an extremum comprises instructions for maximizing network throughput.

50. The computer program product of claim 49 wherein the instructions for maximizing throughput comprises instructions for monitoring network packet collision history and adjusting client access to specific time slots.

51. The computer program product of claim 50 wherein the instructions for maximizing network throughput comprises instructions for managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between potentially interfering clients.

52. The computer program product of claim 51 wherein the instructions for managing space comprises instructions for simultaneously managing time by selecting client time division multiple accesses on each access point to avoid simultaneous access between potentially interfering clients.

53. The computer program product of claim 49 wherein the instructions for maximizing throughput comprises instructions for monitoring packet angle-of-arrival information to determine access of particular clients.

54. The computer program product of claim 53 wherein the instructions for maximizing the throughput comprises instructions for managing space by controlling the direction of at least one adaptive antenna array to avoid simultaneous access between interfering clients.

55. The computer program product of claim 54 wherein the instructions for maximizing throughput comprises instructions for using beam/null forming to compute on orthogonal antenna array pattern.

56. The computer program product of claim 47 wherein the instructions for approaching an extremum comprises instructions for minimizing packet jitter and packet delay by granting priority access to real time packets.

57. The computer program product of claim 44 wherein the instructions for monitoring comprises instructions for observing the positions of each access point and respective clients, and wherein the instructions for regulating comprises instructions for controlling network access according to a network access topology selected to allow service to more than one client per TDMA time slot.

58. The computer program product of claim 57 wherein the instructions for controlling network access comprises instructions for selecting a modified network topology based on changes in the monitored plurality of network parameters.

59. The computer program product of claim 58 wherein the monitored network parameters include at least one of: data rate used; number of retries; and topological configurations used when talking to clients.

60. The computer program product of claim 44 further comprising a network calibration routine comprising the following instructions:

instructions for instructing a particular access point to transmit a signal in a desired direction;

instructions for detecting the signal using the respective other access points;

instructions for reporting to a main controller received signal strength and direction of arrival detected by the respective other access points;

instructions for repeating the above instructions for each of the respective other access points;

instructions for using the main controller to determine a network access topology to reduce multipath interference between clients.

61. The computer program product of claim 50 further comprising instructions for performing the network calibration routine for each of the respective plurality of clients.